

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1

1 CONGRESS STREET, SUITE 1100  
BOSTON, MASSACHUSETTS 02114-2023

October 23, 2008

Shawn Cody, Director of Environmental Affairs  
Massachusetts National Guard  
Office of the Adjutant General  
50 Maple Street  
Milford, MA 01757

Re: In re Training Range and Impact Area, Massachusetts Military Reservation  
EPA Docket No. SDWA I-97-1030  
Proposed Revised Limited Authorization for Lead Ammunition Training

Dear Mr. Cody:

By letter dated September 25, 2008, the Massachusetts National Guard ("MANG"), on behalf of itself and the National Guard Bureau ("NGB"), requested that the United States Environmental Protection Agency ("EPA") modify the Scope of Work ("SOW") to Administrative Order SDWA I-97-1030 ("AO2") issued pursuant to Section 1431(a) of the Safe Drinking Water Act with respect to three small arms ranges at the Massachusetts Military Reservation ("MMR"). First, the MANG requested that its currently effective authorization to fire with lead ammunition for a pilot project at T (Tango) Range be extended past its expiration date of December 31, 2008. Second, the MANG requested approval to resume firing with lead ammunition at two small arms ranges on MMR, known as J (Juliet) and K (Kilo) Ranges, with an accompanying pollution prevention plan and proposed environmental monitoring program.

This letter and the attached Appendix C constitute EPA's proposed response, which will be subject to public comment for the next 30 days. EPA's proposal would modify AO2 to include (1) a temporary extension of the existing authorization to fire with lead ammunition at Tango Range, and (2) an authorization for a pilot project for firing lead ammunition at Juliet and Kilo Ranges. Under both authorizations, MANG personnel, and personnel from other military and law enforcement agencies under the MANG's supervision, would be permitted to conduct lead ammunition training at the ranges under specified conditions. EPA remains committed to protecting the sole source aquifer underlying MMR, and intends to monitor these projects closely to ensure that the pollution prevention measures succeed and that groundwater is not contaminated as a result of these activities.

## I. Background

In February 1997, EPA issued Administrative Order SDWA I-97-1019 ("AO1") after finding, inter alia, high lead levels in soil and groundwater in the Impact Area of Camp Edwards at MMR. In the Scope of Work to AO1, EPA ordered the NGB to submit, by March 1997, "information relating to the potential health or environmental effects of past and current activities in the Training Range and Impact Area, including . . . [s]mall arms firing" and a

Toll Free • 1-888-372-7341

Internet Address (URL) • <http://www.epa.gov/region1>

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on Recycled Paper (Minimum 30% Postconsumer)

“[d]escription of pollution prevention measures to be undertaken . . . to mitigate the effects on public health and the environment from any future activities at the Training Range and Impact Area, including but not limited to installation of bullet traps and clay liners, as well as an assessment of the effectiveness of the pollution prevention measures.” AO1, Appendix A (Scope of Work), ¶¶ II.A.3.a, II.B.6.

In March 1997, the NGB and MANG submitted to EPA proposed pollution prevention measures for the Training Ranges and Impact Area. The proposed pollution prevention measures included the following:

- a. Suspension of firing at small arms ranges D, K, J, N O, P and U, and implementation of mitigation measures to remove lead from impact berms at these ranges;
- b. Suspension of all live mortar firing until the study required by AO1 was completed;
- c. Suspension of all live artillery firing and live firing at the small arms ranges until the study required by AO1 was completed;
- d. Covering berms at small arms ranges with a water impermeable material except when ranges are in use;
- e. Research and implementation of measures to remove lead in soils at small arms ranges;
- f. Research and implementation of use of non-toxic ammunition, and bullet traps or other capture devices.

See AO2, ¶ 44.

In May 1997, EPA issued AO2, which required implementation of the pollution prevention measures that the NGB and MANG had proposed, certain additional pollution prevention and control measures specified by EPA, and other specified work. See AO2, Appendix A. In particular, AO2 required the NGB to cease firing live ammunition at the small arms ranges:

A. Respondents shall implement the following pollution prevention measures at or near the Training Range and Impact Area:

1. During the performance of the study of the Training Range and Impact Area being performed by the National Guard Bureau pursuant to the February 27, 1997 Order, and following completion of such study until EPA approves in writing the resumption of activities, except as provided in Section XXXIV of the Order, Modification of the SOW, Respondents shall suspend the following activities:

- a. All firing of lead ammunition or other “live” ammunition at small arms ranges at or near the Training Range and Impact Area. . . .;

## **II. June 2007 Petition for Approval to Fire Lead Ammunition at Tango Range**

In March 2006, the MANG indicated a desire to resume training with lead ammunition at the small arms ranges. As a result of this request, an interagency Command Group and a Small Arms Range Working Group were formed to develop a plan for this project, including remediation before any training, and pollution prevention and environmental monitoring during training.

On June 13, 2007, the MANG, on behalf of itself and the NGB, submitted to EPA a written petition for modification of the Scope of Work of AO2, pursuant to Paragraph 125 of AO2, which provides:

If a Respondent believes that a modification of the Work specified in the SOW or in work plans developed pursuant to the SOW is necessary and appropriate, Respondent may petition to EPA for an EPA determination on such potential modification, submitting appropriate documentation. Within a reasonable time after receipt of such petition, EPA will make a determination whether the SOW should be modified. Bases for such a petition may include, but not be limited to, the following: the upcoming Dugway Proving Ground "Bangbox Study" regarding the use of propellants and pyrotechnics; documentation demonstrating that the use of a propellant or pyrotechnic that is suspended pursuant to this Order does not present a threat of harm to the public or the environment that would warrant its continued suspension under this Order; or results from the study required by the February 27, 1997 Order to determine the effect of past, present and future activities on or near the Training Range and Impact Area.

In its petition, the MANG requested a limited modification of the Scope of Work to AO2. Specifically, the petition requested that Paragraph II.A.1.a, which prohibits firing of lead ammunition at small arms ranges, be modified to allow limited firing of lead ammunition at Tango Range. The MANG stated that "[i]n order to comply with new Department of Defense and Department of the Army guidance to the National Guard to reduce deployment time for the soldier from about 18 months down to approximately 12 months, each State must maximize the allotted training time it has prior to unit deployment," and that in order to achieve this, "the Camp Edwards small arms training ranges are a critical training component across New England" in order for soldiers to be certified before deployment. EPA provided an informal two week public comment period on the MANG's petition and supporting documents before issuing its decision.

On July 23, 2007, EPA responded to the petition by issuing a Limited Authorization for Lead Ammunition Training ("LALAT") and modifying the Scope of Work to AO2 accordingly. See Limited Authorization for Lead Ammunition Training (July 23, 2007). The LALAT authorized lead ammunition firing at Tango Range under specified conditions for a seventeen

month pilot period, from August 1, 2007 to December 31, 2008, and emphasized that “[a]fter the conclusion of the pilot period, Respondents may not fire lead ammunition at any small arms ranges, including T Range, at or near the Training Range and Impact Area.” AO2, Appendix B (Limited Authorization for Lead Ammunition Training), ¶ II.E. The LALAT further required a final report on the pilot project:

After the end of the pilot period, Respondents shall submit to EPA a final report on the results of the pilot project. The report shall describe the use history for the range, including the number of bullets fired on the range and the number of bullets contained in the bullet capture system. The report shall summarize any operational issues encountered and how they were resolved, and shall include all monitoring data collected for the pilot period. The report shall include a section with recommendations on any necessary changes to the system or its operation, monitoring, and/or maintenance plans. Respondents must submit this report to EPA no later than March 2, 2009 unless [EPA] grants an extension in writing.

Id. ¶ II.C.5. EPA also noted in the cover letter to the LALAT that:

After the conclusion of the pilot project (December 2008), EPA expects that the relevant stakeholders will reconvene to analyze and discuss the data generated during the pilot project. If the MANG wishes to request to renew this limited authorization, EPA expects to conduct a rigorous scientific analysis of the data from the pilot project and to invite substantial public involvement in determining whether a renewal would be “necessary and appropriate” under AO2. EPA also understands that the MANG may be interested in requesting similar pilot projects for other small arms ranges, such as the J (Juliet) and/or K (Kilo) Ranges, at some point in the future. Naturally, EPA will review any such requests when received, but EPA would expect the MANG to demonstrate that such requested modifications would be “necessary and appropriate” in light of the field results from the T Range pilot project.

### **III. September 2008 Petition for Approval to Continue Firing Lead Ammunition at Tango Range and to Fire Lead Ammunition at Juliet and Kilo Ranges**

On September 25, 2008, the MANG submitted a petition requesting both that the authorization for lead ammunition training at Tango Range be extended “past 31 December 2008 until EPA has rendered its final decision on the Tango Range [trial] period final report,” and also that EPA “[a]llow for the operation and use of lead ammunition on Juliet and Kilo Ranges in accordance with all applicable best management practices (BMPs), operation management and maintenance plans (OMMPs), local, state, and federal regulations.” The MANG stated that “the requested resumption of live fire training is necessary for force protection and military readiness” because “all Guard personnel [must] be qualified on all of their assigned weapon systems prior to deployment” and that, in order to meet training and qualification standards before mobilization, “the availability of additional small arms ranges at Camp Edwards is critical.”



In its petition, the MANG described investigatory and remedial activities that it has conducted at Juliet and Kilo Ranges over the past two and a half years in conjunction with the Army Environmental Command's Army Impact Area Groundwater Study Program (IAGWSP). In brief, the MANG has (1) removed and consolidated tungsten-containing soil from the berms on Juliet and Kilo ranges, (2) installed groundwater sampling wells downgradient of the range to determine if elevated levels of lead, nitroglycerin (NG), and tungsten found in some areas of the ranges had leached to the groundwater, (3) evaluated the risk from direct exposure to groundwater at Juliet and Kilo Ranges for the current and foreseeable site uses, and (4) excavated certain soils containing elevated levels of tungsten and NG on the two ranges.

The MANG also noted that it has conducted an extensive public information effort during the past year regarding the operational status of Tango Range and the plans for Juliet and Kilo Ranges. In particular, the MANG, along with the Army Impact Area Groundwater Study Program (IAGWSP), has developed, and made available for public comment, the following documents:

1. *Juliet Range Best Management Practice: Operations, Maintenance, and Monitoring Plan*, prepared by URS Corporation for the Massachusetts National Guard, dated March 2008.
2. *Juliet and Kilo Range Soil and Groundwater Draft Investigation Report*, prepared by Tetra Tech EC, Inc. for the U.S. Army Environmental Command, dated April 2008 and May 2008, respectively.
3. *Tango Range Interim Pilot Program/Lessons Learned Report*, prepared by the Massachusetts National Guard, dated April 29, 2008.

In support of its petition, the MANG, along with the IAGWSP, has revised some of the documents above and submitted the following documents, which are available for public review and comment:

1. *Draft Juliet and Kilo Best Management Practices: Operations, Maintenance, and Monitoring Plans*, prepared by URS Corporation for the Massachusetts National Guard, dated October 22, 2008.
2. *Draft Juliet and Kilo Project Note on the Soil Removal and Site Preparation*, prepared by the Massachusetts National Guard, dated October 23, 2008.
3. *Draft Final Juliet and Kilo Soil and Groundwater Investigation Report*, prepared by Tetra Tech EC, Inc. for the U.S. Army Environmental Command, dated September 2008.

Finally, the MANG noted that it has requested sufficient funds in its annual operations and maintenance budget to sustain proper operation and maintenance of the STAPP Environmental Bullet Catcher system at Juliet and Kilo Ranges, as identified in the *Juliet and Kilo Range Best Management Practices: Operations, Maintenance, and Monitoring Plans*.

#### IV. EPA Findings

EPA's present findings are based on the information submitted by MANG to date regarding the Tango Range pilot project and on investigatory and remedial activities at Juliet and Kilo Ranges. EPA's findings will be reviewed and updated as necessary based on further information, including, in particular, the final report on the results of the pilot project.

The preliminary studies and data submitted by the MANG indicate that:

- a. Lead has not caused significant groundwater contamination at MMR. Although lead has been detected in one well downgradient of the small arms ranges, no large plumes have been identified.
  - b. The lack of significant groundwater contamination is attributable to two main reasons: (1) the geochemistry of the soil serves to retard the migration of lead, and (2) the depth to groundwater is deep, and substantial intervening soil acts as an absorbent.
  - c. The information does *not* support the conclusion that lead is immobile in soil. Rather, the data suggests that lead in soil will take a long time to significantly impact the groundwater. The models predict that it could take anywhere from several hundred to over a thousand years for groundwater to exceed drinking water standards.
  - d. Elevated levels of tungsten and nitroglycerin have also been detected in soils at small arms ranges. However, neither tungsten nor nitroglycerin has caused significant groundwater contamination at MMR. The removal of soil with elevated concentrations of tungsten and nitroglycerin, along with the establishment of best management practices including long term monitoring for these compounds, should prevent future impacts to groundwater.
  - e. The operational history of the STAPP system at Tango Range demonstrates, on the one hand, that the system has experienced unanticipated problems, and on the other hand, that the MANG has acted diligently to investigate and address such problems as they arise.
  - f. Based on currently available data, the resumption of lead ammunition training at Tango Range has not led to lead contamination in pore water or groundwater.
  - g. Based on the above findings, continuing the pilot project for resumption of training with lead ammunition at Tango Range, and initiating a similar pilot project at Juliet and Kilo Ranges, is appropriate.
  - h. Nevertheless, there are always uncertainties associated with developing conceptual models. Moreover, the soils beneath the ranges have only a finite capacity to act as a migration buffer, and it is not acceptable to use the soils beneath the ranges as a "containment" system for lead or nitroglycerin.
  - i. Consequently, pollution prevention measures are necessary to ensure that the resumption of training with lead ammunition will not result in groundwater contamination.
2. The measures identified in the *Juliet and Kilo Range Best Management Practice: Operations, Maintenance, and Monitoring Plans*, dated October 22, 2008, if performed as described at Juliet and Kilo Ranges, would be likely to accomplish the following:
- a. The plans will minimize the amount of lead and other small arms-related contaminants that may migrate into the environment through the use of a STAPP Environmental Bullet Catcher which will capture the majority of bullets fired on the range. The system also includes a containment system to capture any rainwater runoff from the system, and to minimize infiltration into the environment.

- b. The plans include an environmental monitoring plan to confirm that the environment is protected from releases of hazardous materials. The monitoring plans include soil sampling at the firing line and in front of the bullet capture system, pore water sampling from lysimeters installed at the firing line and the bullet capture system, and groundwater sampling downgradient of the range.
  - c. The plans includes operation and maintenance plans to ensure that the capture system is properly maintained and functioning as designed, and a supervision plan to assure the system is inspected and operated in accordance with all requirements.
3. Continuation of lead ammunition training at Tango Range, and resumption of lead ammunition training at Juliet and Kilo Ranges, is necessary for the MANG, and the other agencies discussed in the MANG's June 2007 and September 2008 petitions, to meet small arms training requirements.

Based on the above findings, EPA has concluded that there are sufficient grounds under Paragraph 125 of AO2 to approve extension of the limited pilot project for training with lead ammunition at the Tango Range, and initiation of a limited pilot project for training with lead ammunition at the Juliet and Kilo Ranges, with specified conditions. EPA has concluded that a modification of AO2 to authorize these limited pilot projects under the conditions specified is both "necessary and appropriate" under AO2. The findings recited in this letter constitute all of EPA's findings, i.e., by authorizing this pilot project, EPA does not necessarily adopt every datum or conclusion contained in the petition or supporting documents.

#### **V. EPA's Proposed Revised Limited Authorization for Lead Ammunition Training**

EPA submits for public comment a proposal to modify AO2 to extend the Tango Range pilot project by one year to December 31, 2009, and to authorize lead ammunition training at Juliet and Kilo Ranges until December 31, 2009. As noted above, the MANG is required to submit a final report on the results of the Tango Range pilot project by March 2, 2009, and EPA expects that the relevant stakeholders will reconvene to analyze and discuss the data generated during the pilot project. At this point, however, EPA is proposing to authorize lead ammunition training at the three ranges through 2009 on the basis of the data presented to date. In other words, while EPA does not yet have an adequate record upon which to grant a long-term authorization for lead ammunition training at the three ranges, the record at this point does support a temporary authorization at all three ranges for a limited period pending a more thorough analysis after receipt of the final report from the initial Tango Range pilot period. Consequently, EPA proposes the following:

1. To modify AO2, Appendix A (Scope of Work), ¶ II.A.1.a, as follows:
  - a. All firing of lead ammunition or other "live" ammunition at small arms ranges at or near the Training Range and Impact Area except as provided in Appendix B or C;
2. To add a new Appendix C to AO2 that largely duplicates the existing Appendix B (i.e., the conditions of the original LALAT for Tango Range through December 31, 2008). The principal differences will be the ranges covered (i.e., Tango, Juliet, and Kilo) and the dates (i.e., through December 31, 2009). A copy of the proposed Appendix C is attached for reference. (To minimize confusion, EPA



does not propose to modify Appendix B, which pertains to the initial pilot period for Tango Range only, and which remains applicable.)

## VI. Procedure

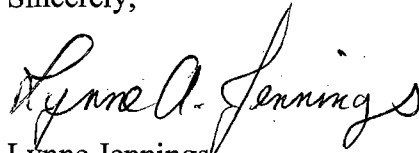
EPA is accepting public comment on this proposal for 30 days. An informal public meeting has been scheduled for November 6, 2008, from 5:30 to 7:00 pm, at the Bourne Best Western in Bourne, Massachusetts. All public comments must be submitted in writing, and may be sent to:

Lynne Jennings (Mail Code: HIO)  
U.S. EPA Region 1  
One Congress Street, Suite 1100  
Boston, MA 02114

After the close of the public comment period, EPA will review public comments, make any appropriate changes, and issue its final decision.

If you have any questions about the terms of this modification, please contact me at (617) 918-1210 or [jennings.lynne@epa.gov](mailto:jennings.lynne@epa.gov).

Sincerely,



Lynne Jennings  
Technical Project Coordinator

cc: Laurie Burt, MassDEP  
Mark Begley, EMC  
Kent Gonser, IAGWSP  
MMRCT Members

PROPOSED APPENDIX C TO EPA Region I  
Administrative Order SDWA I-97-1030

SCOPE OF WORK  
MASSACHUSETTS MILITARY RESERVATION  
TRAINING RANGE AND IMPACT AREA

Appendix C to  
EPA Region I Administrative Order  
SDWA I-97-1030

I. INTRODUCTION AND PURPOSE

This Revised Limited Authorization for Lead Ammunition Training (RLALAT) authorizes Respondents to conduct lead ammunition training under specified conditions for a limited pilot project on T (Tango), J (Juliet), and K (Kilo) Ranges at Massachusetts Military Reservation (MMR) on Cape Cod, Massachusetts. The RLALAT is appended to the Scope of Work of the Administrative Order, Docket Number SDWA I-97-1030 (the "Order"), issued by the United States Environmental Protection Agency (EPA) regarding the Training Range and Impact Area at MMR, and specifies the conditions under which Respondents may conduct such training and the Work that Respondents must perform associated with such training.

II. LIMITED AUTHORIZATION

- A. Authorized Period: With respect to T Range, all requirements of Appendix B of this Order remain in effect for the pilot period specified therein, and this RLALAT is effective from January 1, 2009 to December 31, 2009 (T Range's "authorized period"). With respect to J and K Ranges, this RLALAT is effective from the date of signature to December 31, 2009 (J and K Ranges' "authorized period").
- B. During the authorized period, Respondents and persons operating under their supervision may fire lead ammunition at T, J, and K Ranges, subject to the following conditions:
  - 1. The provisions of the T Range Best Management Practices: Operations, Maintenance, and Monitoring Plan (dated June 8, 2007) and the Juliet and Kilo Best Management Practices: Operations, Maintenance, and Monitoring Plans

**PROPOSED APPENDIX C TO EPA Region I  
Administrative Order SDWA I-97-1030**

(dated October 22, 2008) are hereby incorporated by reference. Respondents must fully perform the activities described in the plan for the corresponding range.

2. Respondents shall continue to conduct public informational meetings throughout the authorized period and consider public comments received at these meetings. Respondents may be required by EPA to modify the operation, maintenance, and/or monitoring activities as a result of comments received during the authorized period.
  3. Respondents shall provide EPA with copies of all documents or reports required by the Environmental Management Commission for consideration during the authorized period.
  4. This approval is subject to periodic audits, including split samples of environmental monitoring, to be conducted by EPA or its contractors throughout the authorized period. Respondents may be required by EPA to modify operation, maintenance, and/or monitoring activities as a result of these audits.
- D. The conditions of Paragraph II.B are fully enforceable requirements of the Order and violations of any of the above conditions may be subject to penalties under the Order.
- E. After the conclusion of the authorized period, Respondents may not fire lead ammunition at any small arms ranges, including T, J, or K Ranges, at or near the Training Range and Impact Area.
- F. Respondents are responsible for supervising their own personnel, personnel from other agencies that fire lead ammunition at T, J, or K Ranges, and any contractors or consultants (including other

**PROPOSED APPENDIX C TO EPA Region I  
Administrative Order SDWA I-97-1030**

government agencies) that Respondents engage or authorize to conduct any activities at T, J, or K Ranges. Respondents shall ensure that all persons conducting activities at T, J, or K Ranges comply with the requirements of this RLALAT, the Order, other administrative orders issued by EPA with respect to MMR, and all applicable law. Respondents may be liable and subject to penalties for any violations of this RLALAT, the Order, other administrative orders issued by EPA with respect to MMR, or other applicable law, caused by any persons conducting activities at T, J, or K Ranges.

- G. Except as specifically stated in this RLALAT, Respondents remain obligated to comply with all the terms and conditions of the Order, including Appendix A (Scope of Work) and Appendix B (Limited Authorization for Lead Ammunition Training).
- H. The TPC or the Regional Administrator may modify or withdraw this RLALAT at any time upon twenty-four hours' written notice.